

UNCLASSIFIED

AAC-TR-9601/79

FLD 1

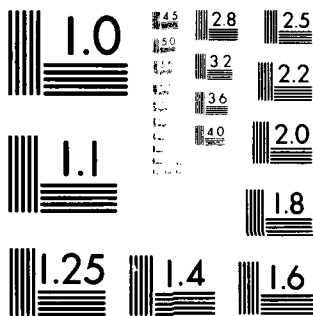
DBA001-79-C-0061
NL

DNA-5047T

121

END
DATE
FILMED
6-80
DTIC

END
DATE
FILMED
6-80
DTIC



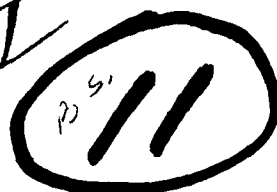
MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS-1963-A

ADA 084647

LEVEL

III



AD-E 300 768

✓DNA 5047T

NEW ALTERNATIVES FOR TARGETING THE SOVIET UNION

Analytical Assessments Corporation
P.O. Box 9758
Marina del Rey, California 90291

31 July 1979

Final Report for Period November 1978—July 1979

CONTRACT No. DNA 001-79-C-0061

APPROVED FOR PUBLIC RELEASE;
DISTRIBUTION UNLIMITED.

THIS WORK SPONSORED BY THE DEFENSE NUCLEAR AGENCY
UNDER RDT&E RMSS CODE B364079464 V99QAXNJ3030I H2590D.

Prepared for
Director
DEFENSE NUCLEAR AGENCY
Washington, D. C. 20305

DTIC
ELECTE
S MAY 25 1980 D
D

80 4 9 042

DC FILE COPY

Destroy this report when it is no longer
needed. Do not return to sender.

PLEASE NOTIFY THE DEFENSE NUCLEAR AGENCY,
ATTN: STTI, WASHINGTON, D.C. 20305, IF
YOUR ADDRESS IS INCORRECT, IF YOU WISH TO
BE DELETED FROM THE DISTRIBUTION LIST, OR
IF THE ADDRESSEE IS NO LONGER EMPLOYED BY
YOUR ORGANIZATION.



UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER DNA 5047T	2. GOVT ACCESSION NO. ✓ AD-A084647	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) NEW ALTERNATIVES FOR TARGETING THE SOVIET UNION		5. TYPE OF REPORT & PERIOD COVERED Topical Report for Period Nov 78-Jul 79
7. AUTHOR(s) George H. Quester		6. PERFORMING ORG. REPORT NUMBER AAC-TR-9601/79 ✓
9. PERFORMING ORGANIZATION NAME AND ADDRESS Analytical Assessments Corporation ✓ P.O. Box 9758 Marina del Rey, California 90291		8. CONTRACT OR GRANT NUMBER(s) DNA 001-79-C-0061 <i>new</i>
11. CONTROLLING OFFICE NAME AND ADDRESS Director Defense Nuclear Agency Washington, D.C. 20305		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS Subtask V99QAXNJ303-01
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE 31 July 1979
		13. NUMBER OF PAGES 58
		15. SECURITY CLASS (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES This work sponsored by the Defense Nuclear Agency under RDT&E RMSS Code B364079464 V99QAXNJ30301 H2590D.		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) <div style="display: flex; justify-content: space-between;"> <div> Targeting Deterrence Soviet Union Nuclear War </div> <div> Missiles Missile Accuracy Cruise Missiles Economic Recovery </div> </div>		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) New options for targeting the USSR are made necessary by the growing threat of Soviet strategic forces, and are made possible by the increased accuracies and numbers of American warheads. The increase in American capabilities not only would allow destruction of some targets which previously have been invulnerable, but also allows the sparing of important facilities in the USSR while surgically targeting others. <i>What to hit, and what to spare, will thus be much more important questions than in the past.</i>		

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

20. ABSTRACT (Continued)

The most important U.S. objective remains to deter Soviet aggression in the first place. Other important considerations are to reduce damage to the U.S. and its allies if a war should nonetheless occur, to keep the Soviets from gaining politically in such a war, and to limit escalation and facilitate war termination.

Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DDC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By	
Distribution/	
Availability Codes	
Dist.	Avail and/or special
A	

DTIC
ELECTE
MAY 23 1960
S D

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

EXECUTIVE SUMMARY

Important new choices for targeting the Soviet Union are raised by the continuing growth of Soviet military forces, and by the increased accuracies and numbers of American warheads. The increase in American capabilities allows us to aim at and destroy some targets which we previously could not have destroyed, but also to spare important items in the USSR while "surgically" targeting others. Thus, what to hit and what to spare will be much more important (and more manageable) questions than in the past.

The forms of Soviet aggression for which we will have to prepare additional uses of our strategic forces can range from an all-out "spasm war" to attacks directed only at Europe (perhaps only with conventional forces), or only at our naval forces around the world, or only at our land-based missile forces.

As has always been the case, we will wish to serve the following objectives in our target planning for the response to such attacks:

- (1) To deter the Soviet aggression in the first place.
- (2) If an attack comes, to reduce damage to the United States and its allies.
- (3) If an attack comes, to keep the Soviets from winning the political gains they sought in the attack.
- (4) If an attack comes, to avoid further escalation, and to facilitate war termination.

To serve these objectives, the American response to the spectrum of possible Soviet aggressions may be inadequately defined by such traditional target categories as: Soviet population, Soviet military forces, Soviet political leadership, and Soviet economic recovery, for each of these categories blends together some targets we might wish to spare and some we would wish to destroy.

The ability to strike with accuracy may thus be most significant in the end for offering the ability to avoid hitting other targets in the vicinity, i.e., the ability to exercise restraint. The addition of new ballistic missile and cruise missile warheads may be significant, also,

for assuring us that we can destroy various targets, if we choose to, after some delay, thus lifting the need to destroy them immediately, thus again allowing us freedom to exercise restraint. Among the major reasons for restraint in nuclear targeting are the following:

- (1) The possibility of a mutual-hostage situation where each side spares some targets on the other side, in exchange for some similar restraint.
- (2) Avoidance of the kinds of targets (for example, strategic missile silos) which might put the adversary into a "use them or lose them" situation and thus stampede him into an escalation we want to avoid.
- (3) Sparing targets which are actually assets to our side, for example, the people of Prague or Warsaw, or perhaps Tallin or Vilna or the Kazakh region.
- (4) Sparing some resources which might be of enormous value in the post-war recovery phase, and might then be made available in trade for similar resources on our side, or in exchange for our withholding further nuclear attacks.
- (5) Sparing the targets about which we must feel great moral qualms.

The argument here is *NOT* that we only match the Soviets in nuclear attacks, never doing more to them than they have done to us. This would upset important parts of a deterrent posture to war in the first place, for example, where the threat of nuclear escalation deters a Soviet conventional tank invasion of Western Europe, and it would give the Kremlin leaders all the advantages of the asymmetries between our two societies, as certain kinds of civilian losses in the U.S. would bother our leadership much more than the identical losses in the USSR would bother the Politburo. Instead, the recommendation is that we seek out innovative forms of attack which will hurt the Politburo correspondingly much, hopefully so much as to deter their attacks in the first place (at least to respond to, and punish, such attacks), at the same time without going into all-out escalations which would end intra-war deterrence.

Some kinds of targeting strategies have the pitfall that they can be used against us, as well as against the USSR, thus not shifting the asymmetries in our favor at all. Other forms of targeting, however, might redound more to our advantage.

Of the specific targeting choices listed below, those in the first section are salient for offering the possibility of imposing on the Soviet leadership a greater dependency on foreign economic cooperation. Those in the second section mainly pose the threat of a greater domestic challenge to the Politburo's authority, and those in the third, the prospect of greater slowdown of the Soviet economy, while the targeting choices in the fourth section are relevant to imposing on the Soviets a disincentive to using their military forces.

Some of the choices examined in this paper on the question of "to target or to spare," are thus as follows:

- (1) Soviet industries which might be dependent on American inputs after a cease-fire. (Section 2.1.1)
- (2) Soviet targets capable of short-term recovery, as compared with those capable of a recovery only after a protracted period of time. (Section 2.1.2)
- (3) Soviet ports and other crucial logistic links with the outside world. (Section 2.1.3)
- (4) Soviet transportation in general. (Section 2.1.4)
- (5) The Soviet conventional military establishment. (Section 2.2.1)
- (6) Soviet defenses on the Chinese border. (Section 2.2.2)
- (7) Ethnic minorities and captive nationalities within the USSR as well as Eastern Europe. (Section 2.2.3)
- (8) Soviet communications. (Section 2.2.4)
- (9) Soviet transportation links to remote or ethnically diverse areas. (Section 2.2.5)
- (10) Soviet population groups after they have been evacuated from cities, also empty Russian cities after an evacuation. (Section 2.2.6)
- (11) Soviet police and political control systems, including the shelter space specifically assigned to Soviet political elites. (Section 2.2.7)
- (12) Soviet central management and data processing capability. (Section 2.3.1)
- (13) Sectors of Soviet society which might be identified as "consumers" more than "producers." (Section 2.3.2)
- (14) Soviet electrical supply. (Section 2.3.3)
- (15) Soviet transportation which might prove a liability for the regime. (Section 2.3.4)

- (16) Soviet strategic missile forces. (Section 2.4.1)
- (17) Soviet conventional military forces. (Section 2.4.2)
- (18) Soviet production for conventional military forces. (Section 2.4.3)

TABLE OF CONTENTS

	EXECUTIVE SUMMARY	1
	TABLE OF CONTENTS	5
I.	INTRODUCTION	7
	1.1 Augmented U.S. Missile Capabilities	7
	1.2 Forms of Soviet Attack	9
	1.3 Categories of Target Choice	11
	1.4 Reasons for Restraint	13
	1.5 Some Additional Points on Targeting Philosophy . . .	15
II.	ILLUSTRATIONS OF CHOICE	20
	2.1 Target Choices Which Might Increase Soviet Dependence on Foreign Economic Cooperation	20
	2.2 Target Choices Which Might Pose a Threat of Domestic Challenge to the Politburo's Authority. .	29
	2.3 Target Choices Which by Our Restraint Might Hamper Soviet Economic Recovery	41
	2.4 Target Choices Affecting the Usage of Soviet Military Forces	46
III.	SOME CONCLUSIONS	52

I. INTRODUCTION

The new Soviet threats of missile power, and the new American capabilities of missile fire in return, inevitably require the consideration of new alternatives. We shall return to a more specific discussion of possible Soviet threats below, but first will begin with some straightforward targeting implications of the additions to American capability.

1.1 Augmented U.S. Missile Capabilities

American ballistic and cruise missiles will be far more accurate than what we had at our disposal in the past. The growth of such accuracy not only increases what we can destroy (although much of what we can destroy now was destructible before, we can take out more Soviet missile silos and perhaps more superhardened shelters) but also in what we can spare as we "surgically" destroy only very particular targets.

Greater accuracies mean that we hit what we are aiming at more closely, and thus stay further away from what we are NOT aiming at. It also means that we can use smaller warheads to achieve the same likelihood of destruction against our true target, again thus reducing collateral damage.

This increase in the accuracy of our missiles is accompanied by a substantial increase in the number of warheads which will be at our disposal. This will again increase both what we can destroy and what we can spare. Knowing that we will have additional warheads which could be used later to destroy some target may allow us to forego destroying it earlier.

At the very least, we thus will have to consider and contemplate new targeting options offered us here, some of which might even be carried out with non-nuclear warheads on high-accuracy missiles, most of which can be fine-tuned so as to leave important items of value in the USSR as yet untouched.

Some of our target options will be highly contingent, as we would definitely want to destroy them under some circumstances, and would just as definitely want to leave them alone under others. Where we have not thought

through such contingent situations in the past, because we did not have the luxury of such detailed destructiveness, we ought to think them through now.

As noted at the outset, however, there are two very different kinds of factors driving us to undertake a more elaborate sorting of our target options. First, the new technology of high-accuracy ballistic and cruise missiles offers us degrees of choice which were unattainable before. Second, perhaps equally important, the Soviet Union in its open statements about nuclear war and grand strategy has not shown any lack of interest in "war-fighting."

If Soviet leaders would ever openly become "MADvocates," i.e., would ever openly announce that they were themselves deterred by the prospect of seeing millions of their people killed, and did not expect under any circumstance to be able to "win" any future war, then many (not all) of our worries would be eased. Yet Soviet public statements never really make this concession, never explicitly put avoiding World War III ahead of winning it for the USSR, or ahead of cutting the costs for the USSR if a World War III should come.

American believers in "Mutual Assured Destruction" ("MAD") explicitly rank reducing the likelihood of war well ahead of any moves to protect our civilians if such a war were to come. They therefore favor renunciations of ABM and civil defense on our part, and renunciations of high-accuracies for our missiles, the kinds of accuracies that could destroy Soviet silos before they fired their first or second missiles at U.S. cities, the kinds of accuracies which by a certain logic could increase the risk of a World War III by making Soviet decision-makers nervous and prone to stampede. One searches in vain for a Soviet duplicate of the American "MAD" position.

If Soviet statements were ever to duplicate those of American believers in MAD, it might thus indeed be good news, although we would still have to be on our guard lest this simply be a move to lull us into a false sense of security. We would have to watch closely to see whether Soviet strategic force procurements were indeed consistent with renunciations of capability inherent in a MAD policy. As things stand, however, our problem is quite different, namely identifying what indeed has a reasonably high likelihood of deterring Soviet aggressions (given that the vulnerability of Soviet population may not be sufficient for this function).

One thus feels a greater certainty about deterring by denial of gains, rather than deterring by the addition of supplementary punishment. If a Soviet aggression is intended to gain political power or economic strength, the chances are very good that it will not happen when the Politburo remains convinced that an aggression would indeed lead to less political power or economic strength. The pursuit of a +A is thus deterred by the certain prospect that attack will in truth lead to a -A.

Inherent worries and uncertainties (from which in some sense springs all of the strategic speculation we must conduct here) arise when one instead plans to deter such aggressions by an additional punishment; this amounts to adding a setback in some other category, e.g., the loss of Russian people killed in a war, to discourage an aggression aimed at political power or economic strength. Will a -B compensate for and cancel out a +A? Given the inherent difficulties of establishing how the Politburo compares such categories, we face unavoidable difficulties in finding any final answer.

The upshot is thus that we must plan the use of our strategic forces with a view to what will best deter war in advance, as well as to what will best serve the interests of the United States if deterrence fails and wars break out. We must seek to deter the Politburo in face of its apparent and admitted desire for power, while at the same time still not driving and stampeding that political leadership into any pre-emptive war that neither side would have wanted. We must try to reduce damage to the United States itself and to its allies during the war that happens, to avoid political losses to the Communists in such a war, and to facilitate the recovery process after a cease-fire; at the same time we must be concerned to maintain intra-war deterrence and to avoid escalations to higher levels of violence during the war, and to facilitate a war-termination. This elaborate and complicated context is what steers much of the discussion of choices that follows here.

1.2 Forms of Soviet Attack

The United States is not going to start World War III. The execution of our nuclear target planning would only come in response to one form or another of Soviet aggression. Yet the assumption can not be made that such Soviet aggression would be so total and unrestrained at the outset that our appropriate response should also be total and unrestrained.

For various reasons, the Politburo may put us into the position of wanting to restrain our strategic attacks on the USSR, hitting some targets while carefully avoiding others. Some of such a Soviet approach to the initiation of the war is, as noted above, already implicit in Soviet public statements about war-fighting, which do not resign themselves to viewing World War III simply as a disaster for mankind, but suggest that they would wage it deliberately with a view to winning a political victory. Another part will be based on the increased accuracies and numbers of *their* missiles, which will similarly allow them to spare some U.S. targets while hitting others. Yet another part of the Soviet motivation for putting us into a situation where we would have to be concerned for intra-war deterrence might come from their experimentation with some geographically limited aggressions against allies of the U.S.

Translating this into a spectrum of possible forms of Soviet attack produces at best a very incomplete list, although the range of the spectrum demonstrates why a broader range of American targeting choices may very much be needed.

At the extreme, we might be responding to an all-out Soviet attack of the classic "spasm war" variety, where the Russians were simply trying to fire off missiles and impose destruction on an "as much as possible, as soon as possible" basis. In such a case, our response might be much the same, mainly applying our new accuracies to try to put their remaining missile forces out of action, otherwise trying to cripple their economy into the future, to balance the fact that they have imposed great damage on ours. (Even in this "spasm" case it might, however, be important that our own response be more thought-out and less spasmodic, not in a futile quest of some sort of mutual restraint, but because some kinds of damage to the USSR will not help us. The entire philosophy of the "unbalancing attack"--which the Russians might also apply to their assaults against us--is that one does not simply destroy as much as possible, but that one deliberately leaves some things intact, if only because undamaged they will be more of a burden than an asset for the enemy society attempting recovery.)

Short of a spasm attack (or a general attack on our forces and economy conducted more carefully by the Soviet strategic forces) we must also then consider more "limited" Soviet options, including a conventional invasion of Western Europe, or a nuclear attack just on Europe, also including such more esoteric options as the simple sinking of the bulk of our naval forces. For contests over territories as important as Europe or Japan, we might want to be able to bring the power of our strategic forces to bear, but at the same time we would not want to have only the option of all-out escalation in the application of such force. (It remains true that much of the impact of such exercises will not show up in actual crises or wars, but in the advance perception of such possibilities by the citizens of the countries we care about. As they perceive that we have designed a broader range of targeting choices for the application of our new nuclear missiles, they may be less prone to being intimidated or "Finlandized" by the growth of Soviet military forces.)

Finally, on our spectrum of possible Soviet initiations of war (and most importantly in terms of the American strategic debate of the past five years), the Politburo might undertake to attack only our land-based missile forces, together with our bomber aircraft on their bases, perhaps leaving intact our submarine-based missile forces at sea, and generally avoiding attacks on our cities and population and civilian economy. The last option would presumably be intended to put the USSR into an overwhelmingly superior position for any further escalation into an all-out or spasm war, and thus leave us totally intimidated after this limited nuclear exchange, surrendering our positions in any crisis which had erupted in Berlin or Yugoslavia or anywhere else.

1.3 Categories of Target Choice

The array of target choices we must consider has been broken down many different ways in the past; we are arguing that it will have to be broken down much more finely now. To begin with a relatively crude and traditional list, let us sort out the following kinds of target options:

The Soviet population at large: While "finite deterrence" theorists of "mutual assured destruction" often assume that this is the perfect and

adequate target, it never has really been acceptable as such, for several reasons. It is blatantly immoral to make plans for mass homicide of innocent people and contrary to American traditions, and against international law. On a strategic basis, moreover, it does not answer the concern that the Russian leadership might be undeterrable by such "punishment instead of denial." If we are to be sure that the Politburo will be deterred from aggression, the Soviets must be convinced that they will be denied the fruits of aggressions, rather than simply being punished by having large numbers of people killed in Russian cities. Furthermore, it may not be possible to kill large numbers of Soviets.)

Soviet military forces: If this mainly refers to Soviet strategic forces, the risk emerges of stimulating a pre-emptive missile attack on the United States. If it rather includes the conventional military power of the USSR, we may find greater agreement on the desirability of the attack, but still will encounter a number of the dilemmas to be discussed below.

Soviet political leadership: Perhaps our ideal form of attack would be to punish Soviet aggression by killing those leaders directly responsible for it, and thereby liberating the rest of the Russian peoples from their dictatorship. Yet *how* to do this is a major problem, and the desirability of doing it, in face of the latent possibilities of "last-gasp" missile strikes at American cities, will also be a problem.

Soviet economic recovery: This can be seen as an indirect way of threatening the political power of the Soviet elite, and thereby of stripping them of the fruits of any aggression, but it is a category which above all may have to be subdivided into subtypes of useful or non-useful strategic attack. If the Russians are doing all they can to set back our economy, we may well have no choice but to do all we can to set back theirs. Since such economic strength is seen by all sides as a central ingredient for political power, the threat of such a setback would similarly serve to enhance the deterrence of Soviet aggression in the first place. Yet, if such a Soviet aggression has occurred, and the Soviet leadership has not yet escalated to an all-out attack on our people and economy, we may well want to strike back with a much more precisely defined and fine-tuned use of our warheads against their economic centers.

1.4 Reasons for Restraint

One can think of at least five kinds of reasons why we would want to spare a particular target within the USSR. The first would simply be traditional mutual-hostage reasoning, whereby the Soviet leadership was assumed to prize some target area, and was willing to hold back strikes at something we value, in exchange for the sparing of its own prized items.

A second reason, also already mentioned, has been fear that some kinds of targets, for example, strategic missile forces, would (if attacked) put the Soviet leadership into a state of pre-emptive panic, feeling itself to be in a "use them or lose them" situation, and thus lead the Soviets to inflict severe damage on the United States that could have been avoided, simply because this was their last chance to do so.

But a third reason to spare a target will arise where it would be a political asset or other asset for our side, and/or a threat to the Soviet leadership, such that we would not want to do them the "favor" of destroying it. If one, for example, expects the Great Russian leadership of the Politburo to be fearful of rising ethnic minority power after a nuclear war, the destruction of cities in Lithuania or the Ukraine should perhaps be avoided.

One must even consider some more bizarre possibilities here. If we are, for example, considering the Soviet potential for economic recovery after an attack, the Politburo undoubtedly views its own central control over Russian economic processes as an asset for this; yet what if we in our own objective calculations concluded that recovery would proceed faster if the dead hand of Soviet central management were to be lifted? Should we avoid destroying the Soviet central management of economic processes, because this management actually holds their economy back and thereby helps us in the worldwide power struggle? Stranger linkages than this have appeared in the past in the interaction of economic processes and national power. As we acquire the ability to choose more finely among targets now, we ought to consider some of these esoteric choices more carefully.

A fourth reason to moderate one's style of nuclear targeting would then, of course, be that the target spared might be of some material and practical use to our side fairly soon after the war was terminated. This does

not necessarily presuppose as with the case of World War II that we expect to achieve an enemy surrender so that his remaining resources became ours to use. (A popular legend in West Germany is that we never bombed Heidelberg, because the U.S. occupation authorities had preplanned the location of much of their military administration facilities there.) Even if the Soviet Union is not forced to surrender, a peace or truce may develop in which the two sides--for a host of practical reasons--then enter into a certain de facto cooperation in the recovery process. What if we had more than enough of a few commodities which the USSR needed badly, and they were oversupplied in turn with some things we needed? It might be madness for the two recovery administrations not to engage in some trade here, once the nuclear missiles were no longer being fired.

Even if the Soviets were unwilling to help us to our feet in exchange for our economic cooperation, we might very credibly be able to threaten a resumption of nuclear attacks by our strategic reserve forces, if the commodities the Soviets were withholding from us were all that stood between our national recovery and national disintegration. This hardly amounts to an argument for leaving all the Soviet economy undestroyed, as some sort of abundant larder of relief supplies, while our own economy was being ground down by their attack. Yet it is an argument for the selective sparing of a few commodities which the world as a whole may find in short supply after a World War III, commodities which we might need more than most people. Blending this argument with the third one cited above, we might be especially eager to spare certain economic targets when they were surrounded by populations which might be rallied to our side.

A fifth reason to moderate targeting policy in a nuclear war is one that has been mentioned many times in history, although it has too often been observed just as much in the breach as in the practice. Simple morality suggests, when it can be avoided, that we do not kill innocent people, or destroy cultural monuments, or set back civilization. The Soviet government is dominating rather than representing the peoples of the USSR and Eastern Europe; if a World War III happens, it will be because of a Politburo decision rather than because the Soviet peoples lusted for territorial expansion.

In World War II we, by contrast, has some grounds for concluding that the Germans had been enthusiastic about Hitler and Naziism, so that their suffering in a bombing campaign amounted to punishment for the guilty, rather than simply killing the innocent to punish the guilty. (It was nonetheless ironic that the urban centers *most* bombed by the RAF and USAAF were indeed often the electoral districts that had persisted longest in voting Socialist or Communist rather than Nazi in the last elections before Hitler eliminated all free ballots. This correlation was, of course, just practical coincidence, as the Nazis had tended to be less strong in such urban industrial centers as Hamburg than in the smaller cities and in the countryside.)

In the past, such considerations of morality often has to be put aside because the inaccuracy and magnitude of weapons seemingly made it impossible to hit industrial and military targets without imposing collateral damage as well on civilians (and we may at times have welcomed such "collateral damage," where we adopted "finite deterrence" theories by which the Soviet leadership would be deterred from aggressive behavior by the prospect of the suffering of its civilians).

The new accuracies for the missiles we are discussing here, however, make it necessary again to consider ways of sparing the innocent, if only because as Americans we may hate ourselves if we do not fully explore the possibility of doing so.

1.5 Some Additional Points on Targeting Philosophy

The drift of the arguments here is *NOT* to suggest that we simply match the Soviets at all points in nuclear attacks, never doing more to them in the use of strategic weapons than they have done to us. Such a rigid tit-for-tat policy would, for example, keep us from escalating to the nuclear level where what they had done was send their conventional armored forces forward into Western Europe. It would also limit us to attacking the mirror-image of targets they had hit, where attacks on such targets on their side might bother their leadership much less than our losses had hurt our decision-makers.

Rather, the recommendation is that the degree of Soviet attack be matched by correspondingly painful attacks on our part, as part of the general effort

at achieving the full range of deterrence noted above. We can not ignore their restraints where such restraints have been maintained, for to do so would be to needlessly damage our own national interest. Yet we can also not be slavishly bound by the forms of such Soviet restraints, for to do so would be to constrict ourselves unfairly. Rather, we must find ways to combine restraints against further Soviet escalation with the punishment and discouragement of whatever aggressions they have already launched.

Whatever else may be unpredictable about the future of strategic scenarios, the following prediction seems safe: the distinction between nuclear and non-nuclear warheads will remain one of the most important fire-breaks for controlling and limiting any war, perhaps even more important than the distinction between fighting a geographically-limited war in some "third area" and extending it into the home territory of the Soviet Union itself..

If we thus want to be able to hold in reserve our escalation to thermo-nuclear warheads as a barrier to similar escalation by the Russians, this may no longer bar us from considering a number of interesting targeting options within the USSR, exploiting the extraordinary new accuracies of ballistic and cruise missiles, also exploiting some breakthroughs in earth penetration techniques and high-explosive warhead design. At the least this amounts to the proposal that very high priority be accorded these latter forms of weapons research, so that we could contemplate the attacking of dams or tunnels or railway bridges within the USSR, or alternatively government buildings, monuments, KGB headquarters, etc., without crossing the nuclear threshold.

This clearly is an area in which the U.S. might be able to stay technologically ahead, and the number of targets which would lend themselves to such attack (which the Soviet leadership would mind having attacked, such that the prospect would be deterring) is indeed likely to increase. New dams and railway bridges get built, new and vulnerable facilities become more and more a part of ordinary life, etc. One might even be tempted to include the new nuclear power plants of the USSR on this target list, except that a conventional-warhead missile attack on such a plant might still seem the crossing of the

nuclear threshold, since fallout is fallout. Ways of otherwise disrupting the Soviet electric power grid by such attacks, at a surgically clean distance from Soviet reactors would, of course, be within bounds.

It must, however, be noted that all the cleverness we can bring to exploiting our new capacities for accuracy in a responsive American targeting of the USSR can also be used potentially by Soviet target planners, who should not be presumed to be any less astute than we are. We have already noted how the concept of the imbalancing attack (by which one leaves a certain fraction of the opponent's population and industry undamaged, because this can be counted upon to be a net drain on the enemy's recovery) can be used by the Russians as easily as by us. American civil defense planners would hardly lament the news that Soviet targeters had somehow decided to leave a larger fraction of our population alive in a nuclear exchange; but if the Soviet attack at the same time applied a great number of precision warheads to impose a bottleneck on the oil refining industry, these planners would then confront a much more difficult task in planning for economic recovery.

What if the Soviet target planners thus decided to be careful to spare all the vacation and retirement centers of the U.S., and indeed to spare those portions of population centers which make a low contribution to our industrial output, but impose high demands on this output? The Russian planners in effect would be assessing the ratio of internationally-relevant output to consumer consumption for each possible aim point and (at least in the first wave of attacks) would only be striking those that were high on this scale, while deliberately sparing those that were low. Food processing centers might be hit, but "food consumption centers" would not. Would this not make the U.S. weaker for the next round of war or negotiation than if the attack (as is normally assumed) were spread more evenly?

In the same vein, what if the Russians additionally configured their attack to spread their punishment unevenly over regions or especially over ethnic groups? We have seen speculation on the possibilities of an "ethnically-conscious" American targeting policy designed to strengthen the minorities in the USSR against the domination of the Great Russians. Missiles would thus be aimed to spare Lithuanians and Uzbeks and Ukrainians and Armenians, and

to interdict the communication and transportation links which Moscow would have to use to maintain its authority over these subject nationalities. The Great Russian oligarchy which currently dominates all aspects of the Soviet scene might presumably very much dislike the prospect of seeing all such other nationalities grow in political power and independence in a post-attack environment, and hopefully would thus be deterred by this prospect from launching any aggressions in the first place.

From a humane point of view, such a policy of ethnic discrimination in targeting might at first seem bizarre, but it is easier to settle into when one considers the following: In a nuclear war, we would not wish to punish the Czechs or to bomb Prague, on the valid assumption that the people there were not at all at fault, indeed were largely on our side. Similarly, we would want to minimize such a destruction to Warsaw and Budapest, and to the cities and peoples of the other "captive nations." Moving within the official boundaries of the USSR, Lithuania, Latvia, and Estonia are then clearly just as much "captive nations," just as much meriting an exemption from the worst of our retaliatory anger. And then the same special treatment would have to be applied to other peoples who are kept far from major power or influence in the Soviet decision process, the Asian peoples whose high birth rates are already seen as a threat by the Great Russians governing in Moscow, whose greater survival of a nuclear attack would then be a compounding of the threat.

But we must thus then return to our worry that such innovative targeting options may be a two-way street. What if the USSR follows some similar lines of reasoning with regard to its attack on the United States? There are fewer separate minorities within the borders of the U.S., and they clearly do not (as in the USSR) come close to outnumbering the dominant ethnic group; they are also not excluded from power and influence in anything like the exclusion of Lithuanians or Kazakhs in the USSR. Yet one could still imagine Soviet planners taking into account the percentage of Blacks or Chicanos for any particular aim point in the United States, either because the Russians took seriously their own past propaganda about sympathizing with the disadvantages of such groups, or because they anticipated that the sparing of such groups, when the white majority population areas were targeted, would somehow exacerbate

political resentment and divisions within the U.S., complicating and delaying the process of political unification and economic recovery.

Our task in this exercise is thus not only to find newer and more clever applications for the accuracy of missiles, but hopefully to find some applications which we could employ more easily than the Soviets can; thus giving us some asymmetrical advantages to compensate for the various asymmetrical advantages with which the Politburo begins. At the minimum, we can do better, in terms of serving the United States' national interests, if we carefully sort out the additional choices offered us by the enhanced accuracies of missiles, than if we simply stick to older targeting concepts which presume that accurate discrimination among targets is impossible. With luck, we may be able to extract more advantages from such accuracies than the Soviet can extract on their side.

II. ILLUSTRATIONS OF CHOICE

Sorting out the appropriate use or non-use of our high-accuracy missile capability is an engaging but hardly an easy task. The following will thus be only the beginning of a list of illustrative examples of tough choices, which may have to be settled on a contingency basis rather than as a once-and-for-all targeting choice, or which may require very extensive further study before they can even be settled to this degree.

2.1 Target Choices Which Might Increase Soviet Dependence on Foreign Economic Cooperation

The first set of choices on whether to hit or to spare a particular aim point is particularly relevant to whether the authorities in the USSR might be put into the mood to seek foreign good will and cooperation after a nuclear exchange thus perhaps creating an asset for our side at the bargaining table.

2.1.1 When trying to impose economic bottlenecks on the Soviet economy, should we try to do this particularly on inputs which the United States or the outside world as a whole would be capable of supplying, thus putting the USSR into a dependent situation rather than a hopeless situation for the post-attack environment?

It would be good at the bargaining table for the Russians to be very much in need of American assistance, rather than for them to have nothing to look forward to but revenge. How we aim our missiles could make all the difference.

One normally begins an analysis of nuclear targeting with the assumption that the goal is to incapacitate the enemy's war machine, most specifically the bulk of his economy which has been committed to keeping his armed forces in operation. In place of attacking each and every aspect of his economy, moreover, the emphasis then often turns to a hunt for "bottlenecks," for the inputs which are the most lacking in reserves or most difficult to substitute for, such that in the general interdependence of an advanced industrial economy, their destruction would most drag down industrial output overall.

A related, but only slightly different, concept, is that of the "imbalancing attack," perhaps more often discussed with regard to Soviet nuclear assaults on the United States, where the Soviet intent would be to create and worsen bottlenecks by crippling the production of some key and indispensable inputs, while avoiding killing or destroying some of the larger consumers of inputs, thus throwing vastly out of balance the relationship of American supply and demand. This latter concept is possibly more often applied to studies of the United States simply because it is assumed that we (as compared with the USSR) may lack the central authority and cold-bloodedness needed to cut off inessential consumption of scarce resources. A Soviet imbalancing attack might thus deliberately leave intact an American city of consumers, simply to impose that much more of a drain on scarce food and gasoline and other supplies. (As we shall note further along, some of such logic, by which consumers might be spared on the enemy side to burden him with an "imbalance" of supply and demand, can be applied as well to American planning for the targeting of the USSR.)

Yet another approach to bottlenecks will be examined here. Shortages of key commodities could be imposed on the Soviet economy as much to make the USSR dependent on future American shipments as to cripple it. Do we simply want to put Soviet heavy industry out of business, or would we be better off if we left it a hope of getting back into business, BUT only by means of persuading the United States or its allies to deliver certain key inputs, inputs which would obviously be withheld until Soviet nuclear attacks and conventional aggressions had ceased, and until satisfactory assurances about the future of Soviet military and foreign policy behavior had been received?

A typical illustration might be as follows: If we decide to destroy the oil wells of the Soviet Union, does it follow that we should destroy Soviet refining capacity as well? It takes time to resurrect either part of the petroleum system. Leaving the refineries intact would allow the USSR to utilize oil imported from abroad, which might tempt the USSR to seek conquest, but which might also induce the Politburo to moderate its behavior, in hopes of being delivered some crude oil supplies voluntarily. If it is to our interest to give the Russians an incentive to spare the oil facilities of

Mexico and Venezuela and Saudi Arabia from nuclear attack, leaving Soviet refineries intact might thus be one way to instill such restraint into Soviet targeting.

While some portions of Soviet heavy industry are basically indigenous in construction and source of spare parts, others in recent years have been heavily dependent for original equipment and subsequent backup on sources in the west, in western Europe (which perhaps will seem within easy reach of Soviet forces in any all-out war), but also in places as remote as Japan and Australia and the United States. If a targeting policy were to be designed to leave the USSR as dependent as possible on western goodwill after a nuclear exchange, and thus inclined to restrain itself and terminate the nuclear war, we might (as part of a general policy of generating bottlenecks in a destabilizing attack) be wise to destroy most directly those portions of Soviet heavy industry which are largely or totally indigenous in their source, while at the outset attacking less heavily those which would require western cooperation for their continued operation. This restraint might not apply to a West German-built plant, if one expected the Soviet ground forces to overrun all of West Germany in the war. But such forces will not overrun the United States; if a truck-production facility dependent on American spare parts were left dangling in place, as part of any Soviet hopes for an early return to a decent pace of economic activity, this might well be the kind of bait we want to retain.

All of this fits in well with a broader and more general theme that some kinds of intensified trade relationships are to be encouraged between East and West, not because we trust the intentions of the Soviet leaders so much, but almost precisely the reverse, because we do not trust them. The kinds of economic interchange which strengthen Soviet military capabilities are to be watched very carefully indeed. Also to be watched are the kinds of interchange which very early allow the Soviets to copy the technology involved and thus to become fully self-sufficient in a sector of economics. Much more to be encouraged, however, are the kinds of deals where the Soviet leaders, in a desire to make great advances in total wealth for their country, take the risk of becoming more dependent on and addicted to western industrial and technological inputs. As with other forms of addiction, there is clearly the

possibility that the USSR will succumb to such temptations despite the best intentions of its leaders. The desire of the USSR to avoid dependence on the west is comparable to the desire to avoid collocation of plants, in effect a New Year's Resolution which gets broken again and again, where imports from the west (or collocation) turn out to be the easier way to fulfill norms and overcome inherent inadequacies.

The nature of the Soviet command-economy system prevents any full and effective exploitation of resources or of high-technology without outside help, and this is likely to remain true far into the future. While the Soviet political system has some advantages for the management of the post-World War III recovery, a major disadvantage is that by peacetime processes it is likely to render the USSR much more dependent on the United States economically than the U.S. is on the USSR. Unsatisfied consumer demand and unsatisfied goals for economic growth have thus often enough tempted Soviet industrial decision-makers to take the easy way out, to buy from the west even when this made the threat of a western embargo of trade a much more meaningful deterrent for small wars, and when this let the need for western economic cooperation have some leverage also for post-nuclear war recovery situation.

Assuming that there is every reason to predict that such Soviet reliance on western technology will continue, we are then inevitably going to want to address it rather than ignoring it in our targeting. The bias, as suggested here, is clearly that "made in the USSR" factories should be destroyed ahead of those "made in USA."

One important caveat on this, however, might be that we ourselves could very desperately need some crucial input for which we had put the Soviets on such a short leash. We would surely not want to get the post-attack Soviet leadership into a position where it felt driven to threaten renewals of nuclear war if we did not hand over some kinds of resource which we indeed did not wish to have to hand over. The kind of bottleneck we would hope to create would thus ideally come in a resource category where the U.S. (or the outside world as a whole) would under foreseeable circumstances have the means of satisfying the Soviet need, where such needs can easily be responded

to, as long as Soviet foreign policy behavior ceases to be obnoxious. We would want, by the design of our initial strategic attacks, to leave whoever gets into power in Moscow a full range of incentives to cooperate, and few, if any, incentives to go down an uncooperative path instead.

2.1.2 *Are there ways of sorting Soviet economic targets into short-term recovery and long-term recovery, such that we might at the outset mainly hit those which could be put into action again in a short time?*

The prospect of a renewed American attack would thus serve as a continuing deterrent or form of pressure, while destruction of targets which took many years to rebuild would have left no backup "carrot and stick" motivational leverage. Our objective throughout may be to put the Soviets on a "short leash" here, destroying something today which will still leave us something more to destroy if obnoxious Soviet behavior has not ceased by tomorrow, or next week, or next month, or year.

For example, the U.S. can plan for a general assault on all forms of Soviet energy supply, or could instead disaggregate Soviet energy into separate target components, some of which perhaps could be relatively quickly destroyed later on, some of which are easy to restore after an attack.

Internal pipelines for oil or natural gas may be a critical factor for the Soviet economy after a nuclear exchange, just as they will be for the United States. While some portions of such a line are fairly easy to replace after they have been destroyed, a few special facilities, for example, pumping stations where such lines cross rivers, may be more difficult to restore. Again, the question for the United States target planner will be whether as much as possible of such pumping capacity should be destroyed at the outset, or whether the American attack should not instead be configured to narrow down Soviet options here while leaving some in place, once more putting the Politburo or its successors on a "short leash," leaving it with an incentive to make concessions to the U.S. in exchange for a cessation of the attack, leaving with an interest in getting new shipments of crude oil from abroad. Perhaps the initial attack should thus be directed away from the most critical facilities, thus merely imposing a temporary disablement of the pipelines which the Russians can easily enough fix amid the implicit warning that a more

permanent destruction is possible. (Perhaps instead the attack should be directed to permanently incapacitate pipelines connecting Soviet refineries and industry with Soviet oil fields, while leaving intact those which would be used to process and distribute oil or natural gas brought in from abroad, i.e., intended to increase the total of Soviet dependency on external economic inputs, thus dangling before whoever will be making decisions in the USSR the prospect of economic recovery in exchange for good behavior.)

Imposing a short-term rather than long-term disablement on a segment of Soviet industry may not always come without some cost. It might exasperate an American target planner to have to put some facility out of action every three months, using up more warheads and delivery vehicles each time, rather than imposing a permanent destruction on the same facility by the blunter expenditure of a single warhead once and for all. Much will depend here on the American ability to maintain a large reserve of nuclear (and other) warheads, despite any Soviet efforts to destroy such strategic forces by counterforce attacks.

The ability to maintain a large strategic reserve force is desirable for many other reasons, in particular for deterring a Soviet counterforce offensive in the first place. If we do an adequate job of insuring ourselves against Soviet attempts at such a "splendid first strike," we may well in the process give ourselves the elbow room to manipulate Soviet political behavior by the temporary rather than permanent damage discussed here. Temporary damage may thus have a cost, but it has gains, and the costs may be in a category which we will naturally be able to afford.

2.1.3 *Should we spare Soviet ports, thus maintaining Russian post-war capability to bring in relief supplies from abroad, and perhaps thereby maintaining Soviet incentives to spare industrial and other economic targets in Brazil, Australia, Japan, etc.?*

Both the United States and the USSR will be heavily dependent after a thermonuclear exchange on such sources of assistance if they are to recover. How do we manipulate Soviet incentives, in the process of our own nuclear targeting, to give Moscow an incentive to such sources of assistance stay viable?

The motives and capabilities of the "rest of the world" after a World War III will surely be complicated. Some of the nations which have escaped damage in the Soviet-American exchange will be in a mood to be generous in helping with recovery, while others may very selfishly or cautiously hold back resources for their own use, or may even aggressively now see this as the time to move forward toward a position of international domination and "national greatness." Some nations which have renounced the acquisition of nuclear weapons by the Nuclear Non-Proliferation Treaty (NPT) will surely rethink the wisdom of such a commitment after any massive use of Soviet and American warheads, and we might see a fair number of nations racing to try to convert plutonium or uranium into a rudimentary nuclear weapons stock-piles, at the minimum now to try to protect themselves, and perhaps to try to dominate others, even to dominate the shattered former superpowers.

What should we assume will have been Soviet planning in the allocation of warheads, if such possibilities are real for places like China and Brazil and Australia and Japan? What can we do, and what should we do, as part of any effort to deter or blunt or steer Soviet attacks in all these directions?

While Americans and Russians might regard World War III as an international disaster for which the burdens of recovery should be shared over the entire globe (much as the United States shared in undoing the damages of World War II by the Marshall Plan), other countries might see such a war as uniquely the moral fault and folly of Washington and Moscow, so that the two countries devastated in such a war deserved no help or assistance from the outside. (Where such an attitude was anticipated, would both the superpowers go down in a nuclear holocaust without deciding to drag some of the other states and economies down with them?)

The scenarios we have developed for possible forms of a World War III are often quite detailed on exact degrees and locations of destruction within the United States and within the USSR, but remain surprisingly reticent and vague about any details on destruction of the rest of the world. The political sensitivity of discussing the possible destruction of places like Mexico and Australia and India obviously accounts for some of this gap, but it is possible that our general framework for considering alternative targeting options will then suffer from a corresponding gap here.

In the aftermath of a nuclear war, both the USSR and the U.S. may, moreover, be quite desperate for some of such resources left undestroyed in the rest of the world. As has happened in analogous cases in the past (for example in World War I, where the belligerents were sometimes quite high-handed about tampering with neutral property and neutral rights), whatever resource is required may become prone to confiscation or worse, perhaps even with nuclear threats being directed at a place like Caracas or Riyadh if crucial oil is not shipped, etc.

Our planning for a World War III is thus hardly complete unless we incorporate considerations of how best to dissuade the USSR from attacking the centers of key resources in other countries, of how best to keep the USSR after the attack from attempting to coerce and blackmail the outside world into the delivery of such resources, and how best to get such resources delivered as needed to the United States. As with all the other considerations we will discuss here, there will be times where our goals are well served by the rapid and accurate fire of our strategic missile force, but other times where we achieve more by a policy of threat accompanied by restraint, of deterrence through as-yet-unfulfilled threat.

2.1.4 Even where Soviet political control over the territories involved will not come into question, how can we best extract leverage by destroying (or not destroying) Soviet transportation links?

Two general tendencies in the Soviets' industrial investment ought to be interesting and exploitable for our target choices, their tendency in planning to see Siberia as the great underdeveloped frontier, and their conflict-proclivity in practice to locate new industry near existing facilities. The first tendency violates what rational economic planning, in fact, would suggest is optimal for Soviet growth, and may also offer some interesting American leverage for the nuclear war scenario. The second tendency specifically violates injunctions of Soviet planning for such a war, putting the fulfillment of output norms or avoidance of economic losses ahead of the injunctions of the Soviet civil defense manuals.

If Soviet industrial expansion had thus simply been optimized for peacetime output since 1945, less of it would have gone east of the Ural mountains, and perhaps even more collocation of industry into tidy targets would have

occurred. If the recovery potential after a World War III had instead been optimized, there would still have been less of a commitment to Siberia (where the rail and transportation network is too thin), but there would have been a scattering of additional facilities to locations around European Russia always far enough away from existing facilities to avoid putting two eggs in a single target basket.

The Soviet railroad system is generally thin as compared with that of the United States, even though the American system is steadily shrinking and eroding and being consolidated. At the same time, the Soviet rail system carries a much larger fraction of all long-distance freight than does the U.S., as Soviet trucks are mainly reserved for shorter hauls, and Soviet highways do not compare for long distance hauling with the superb U.S. interstate highway system. While Soviet trucking can obviously be pressed into service as a substitute for such portions of the rail system as are destroyed, it is thus still very feasible for American attacks to impose a substantial setback on the Soviet transportation network.

The interesting question here again might thus be whether we want to impose a maximum of damage all at once at the outset, or might instead want to tailor and moderate and channel the damage, allowing some axes of transportation to continue functioning while others are interdicted. Perhaps this restraint would be with a view to leaving the Soviet leadership with some vested interest in the future, a vested interest continually under the threat of American attack and thus doubling as a hostage and pledge for Soviet good behavior. Perhaps instead it would be with a view to encouraging regional tendencies and separatism in the USSR. Perhaps it would be designed simply to cripple the assembly of military hardware (above all, new strategic weapons), while allowing the production and consumption of civilian goods to continue, thus tempting the Soviet system hopefully into settling into a new role in the post-attack world.

Soviet waterways add to the vulnerability of the Soviet transportation network in two ways. First, the destruction of certain dams would seriously flood the areas below them, thereby interrupting rail and road links which, as described, are already thin. Second, a fair amount of Soviet transportation

is itself by water, utilizing rivers and canals which would be inoperable when the dams regulating water levels were destroyed. The assault on such targets again should be tuned to whether we desire to impose punishment upon the particular region in question, whether we want to cut off a region from Moscow, and whether we want to impose the kinds of damage that require long recovery times before they are undone, or whether we instead want to offer the Soviets a first-try at quick recovery, after a short whiff of what life without functional water systems will be like.

One's normal image of Soviet dams, as with dams everywhere else, is of large quantum units which are either left alone or destroyed all at once. Yet a detailed study of any nation's hydro system may uncover a list of more marginal targets, which could be attacked first to nibble and place a strain on the system, which thus (in a manner comparable to the gradual application of conventional bombing to Vietnam) would slowly expand the pressures and warnings applied to the Soviet national command authority. Merely reducing the degree of insurance in the Soviet system against normal seasonal flooding might be a very useful form of such pressure, as such layers of insurance could be peeled off in degrees with each round of American attacks.

The cost of our not attacking the entire Soviet transportation network at the outset comes mainly in the risk that our forces would not be so survivable that we could execute such attacks at any later time at our leisure, when all the supposed advantages of restraining the attack had faded. Given the importance we otherwise attach to beefing up our ability to ride out a Soviet first-strike, we might nonetheless find ourselves with a substantial strategic reserve force capability in the future, a capability now also endowed with high accuracies. The question before us is how best to apply such accuracies, and (when delay is possible) how best to apply such delay. A delay in attacking some of what we can surgically avoid may indeed in many ways serve the national interest of the United States.

2.2 Target Choices Which Might Pose a Threat of Domestic Challenge to the Politburo's Authority

The target choices discussed here are more salient for showing the Soviet Communist leadership that certain natural enemies or threats to central rule within the USSR might be spared by the refined form of our nuclear attack.

2.2.1 *Should we tend to hit military forces, or instead to spare them within the USSR, on the hope that a military government might be more reasonable than the current CP-dominated regime, or the assumption that the military has the final ability to hold back missile attacks on the United States and would do so?*

The Soviet Communist leadership has always shown a fear of an increase of power by the professional military. Would not our leaving their military relatively intact thus sometimes be a threat to Brezhnev and his successors, rather than something they would unquestioningly welcome?

One might wish to prepare a sort of catalogue of Soviet conventional forces here, ranging from those which by type of weapon, or location of deployment, lend themselves most to ground advances against allies of the United States, to those which by the same considerations pose the greatest threat of a coup d'etat against the Communist Party regime. If we wanted to punish the Politburo for its launching of a World War III (or if we want to deter such a war by letting the form of punishment become meaningfully clear in advance) the optimum might thus not be to destroy all of Soviet conventional ground, air and naval forces, but to destroy mostly the first end of the spectrum cited above, and to leave largely untouched the second. As was the case in Nazi Germany, the professional military might be induced and emboldened to put an end to a regime which had brought so much domestic misery and battlefield defeat to the country, and we might be doing ourselves a disservice if our attacks reduced the military's ability to execute such a coup.

In light of what will be suggested a little later in this report, target discrimination will be all the more important where we confront the USSR's ground forces interspersed with those of the satellites. We would want to offer every incentive to the commanders of Polish and Hungarian armored divisions to stay out of the fight, to declare their neutrality openly, or at least to practice it de facto, with the reward that their troops and their territory will be spared our nuclear attack.

Consistent with what we just noted above, we might want to offer the same exemption from attack also to any Soviet Russian commanders who concluded the war was futile, and decided to have their units opt out of it. Any such

disloyalty to the Politburo's edict would of course bring the threat of retaliation and punitive action by more loyal forces. At the extreme we would become involved in a tactical-support targeting of our ballistic and cruise missiles to help one Communist force standoff the attack of another. Sorting out who is on their side and who is on our's will be difficult; the important point, however, is that doing anything about it would have been impossible before the breakthroughs in accuracy, but will be much more conceivable now.

2.2.2 *Should we target, or leave unattacked, Soviet border defenses along the frontier with China?*

The threat of a post-war Chinese move across the border might be a very valuable additional deterrent to Soviet aggressiveness. Yet China is also a nuclear power and a world power, and we might not wish Peking to become too strong in the aftermath of a nuclear exchange which had markedly weakened the USSR and the U.S.

Some of our choices here would have to depend on whether the Russians would panic very badly at the prospect of a Chinese advance, i.e., whether they take some of their own recent "Yellow Peril" propaganda very seriously. To denude some of the Soviet frontiers of their defenses is surely an appropriate punishment for the launching of their aggressions, but which portion of the border is best tuned to this purpose? One could pose the choice between the Chinese frontier and the frontier with a resurgent Islam along the borders of Iran and Afghanistan, or with the Rumanians in Bessarabia, or in the Transcaucasus frontiers with Turkey, or all of the above together.

We historically have seen a pattern of the great Russian people rallying behind even so oppressive a regime as Stalin's when the territorial integrity of the motherland was threatened. Would we want to confront the Politburo with the threat of territorial loss, if this incidentally thereby reduced the threat of popular revolt? Might we be better off leaving the Russian people in a state of lower mobilization, and alienation from the regime, by leaving Soviet frontiers relatively secure?

2.2.3 *Should we (as suggested above) discriminate in favor of non-Great Russian ethnic groups within the USSR, thereby, in the imposition of casualties, threatening the future Great Russian demographic and political control over the USSR?*

Our natural tendency will be to bomb cities like Prague or Warsaw less than cities within the USSR, and then, when we think about it, also to exempt cities in Lithuania, etc. After some further thought, we might wish to extend such exemption also to "captive nations" dating back to Czarist times, the Kirghiz and Kazakhs and Uzbheks, etc.

The higher accuracies attainable with our missile warheads would thus be put to a wide variety of new uses. Where a Great Russian suburb had been implanted near an old Latvian or Lithuanian city, the targeting policy would be to spare the old city and to destroy the new suburb. Where only a few railways connected Moscow with some republic in Central Asia, the railways would be targeted so as to make maximum contribution to any move toward independence on the part of the Kazakhs or Uzbheks or other dissident groups.

Leaving aside strikes at population centers, one can even envisage selective restraint in attacks on economic targets, leaving the non-Russian areas with a greater potential for survival and recovery than the Russian center, giving such areas an elementary incentive to assert their independence now so as to avoid sharing their good fortune with more stricken areas.

As noted, it is unclear how much the United States could ever feel comfortable in being drawn into any public statements or explications of such a policy. While a peace based on mass homicide today satisfies many liberal supporters of a MAD policy, a threat of selective homicide (i.e., genocide) will have a great many unpleasant connotations. Yet, as noted, such a differentiation has all along been almost inevitable, as we were always less likely to direct an H-bomb at Prague than at Moscow, and probably less likely to direct one at Vilna. Some ethnic targeting is thus just as automatic as the fact that we did not bomb Prague during World War II while we flattened Dresden. The proposal here would largely amount to a simple upgrading of such distinctions, as we let it be known that we regard the Soviet leadership as the dominator of a great array of captive nations, and will take this into account in planning to deter that leadership from aggressions.

Such a targeting philosophy will still strike many people as inhumane and as too frankly genocidal. Yet by choosing to spare large numbers of people who would have been killed in the normal mutual-assured-destruction strike as proposed by "finite deterrence" theorists, it would be considerably less

inhumane, and less homicidal. The ethnic discrimination that is added to the targeting pattern in such an approach indeed introduces the issue of genocide, as opposed to simple mass homicide, but it does so by proposing to keep Lithuanians and Poles and Uzbheks alive.

The final moral justification for such a policy is, of course, very parallel to (and perhaps more realistic than) the logic of ordinary mutual deterrence theory, namely that the threats may only have to be allowed to reach the Soviet leadership in advance, and (as they work) will thus never have to be executed. While the ordinary believer in deterrence assumes that a Politburo leader would be deterred from war or from brinksmanship by the prospect of the killing of his people, there are many analysts of Soviet power politics who fear that such deterrence by "punishment" would not suffice. If what the Soviet leaders care about is power, the killing of a large slice of their population may not suffice to outweigh this, wherever an aggression could indeed bring them power. But what if our response was not tailored to punish the Politburo by killing people across the board, but instead to deny it the power it seeks, by keeping alive the very nationalities that historically have been a threat to its power?

It is at least plausible that the Soviet Union has slipped into being a continuation of the traditional Great Russian Imperialism of the Czars in a new guise. Despite the Georgian origins of Stalin and the Ukrainian background of Khrushchev, the overwhelming portion of leaders who make decisions in all the corners of the USSR are Great Russians, and continuous efforts are underway to bring all the nationalities of the USSR into the use of the Russian language, as Great Russians are moved into ethnically alien places almost as Israelis are moved into the West Bank area of Palestine. Causing concern among Soviet planners, for fear that such a policy of cultural standardization will not work, is the fact that birthrates are much higher in the Asian ethnic groups than they are among Great Russians, such that the Russians will not be a majority of the USSR for very much longer.

Perhaps the governance of the USSR does not simply illustrate Russian chauvinism as much as Peking Radio and other outside sources continually charge. The USSR might simply be in the grip of a vicious cycle, by which

Communists truly intended to rise above ethnic nationalism as Lenin urged they should, but where the peoples of such smaller, traditionally independence-minded, republics as Latvia and Georgia and the Ukraine must be inherently suspected of separatist leanings. The result is that Moscow feels that it must overcome such leanings by relying on the Great Russians who ethnically have an opposite vested interest in the unity of the USSR; the unfair status given to the Russian language, and to those who speak it from birth, then of course compounds the desires of the other groups for independence and autonomy. The cycle of mutual suspicion in the end then brings the Politburo, dominated by Great Russians, to a point where it must suspect any demographic enhancement of these other peoples as a threat to its very grip on power.

For it to leak out, therefore, that the U.S. planned to spare the populations of Eastern Europe and of non-Russian regions within the USSR as much as possible in the event of a World War III would thus perhaps deter the potential launchers of a Soviet aggression within the very categories they care about the most, the relative distribution of ethnic strength which has played a central role in their holding of final power.

2.2.4 Should we attempt to erode Soviet internal communications as much as possible, on the assumption that this will impede economic recovery and threaten political control, or should we instead leave much of such communication in place, as part of ensuring reliable command and control over military forces?

Are there ways of discriminating among kinds of communications networks in the USSR, hitting those hardest which are needed to maintain political authority, leaving those secure which are needed to hold back missile fire?

For a variety of reasons, we can perhaps count on the Soviets to allocate the same priority for survival as we would among their communications systems, since their ability to maintain command and control over their missile forces is as important to their well-being as it is to ours. We would want to cripple such Soviet communications links only when we had become committed to a major counterforce offensive here, aiming to reduce damage to the United States primarily by eliminating Soviet nuclear attack capabilities; at this stage we would perhaps have abandoned any hope of limiting such damage in bargaining with the Soviets for mutual restraint, but rather would have designated their communications to strategic forces as a prime target to be hit,

instead of being avoided. Under other circumstances, however, we would probably seek to maintain, rather than in any way cut, the communications ties by which the Politburo can hold back fire or order cease-fires.

A different form of Soviet communications which we might feel no compunctions about attacking would show up in the Soviet propaganda contacts to the masses through radio or TV, the kinds of communication link that have next to nothing to do with military command and control, but which have played an important role in the past for allowing the Politburo to maintain its control over the Soviet peoples and over USSR domestic life.

Again, this form of attack should be chosen as much for its deterrent impact in advance as for its actual contribution to American national interests if it ever has to be executed. The suspicion that a part of its price for launching an aggression will be losing its continual ability to impose voice and visual contact on the average Russian will clearly discourage the Politburo somewhat from beginning such attacks.

Even the knowledge that American cruise missiles could home on Soviet transmitters operating on broadcast-band wavelengths might then be enough to keep such transmitters off the air. But what will the average Russian or Ukrainian or Latvian or Uzbek begin to think, and begin to do, when his daily round of propaganda on the glories of the Communist system no longer is piped through? And what will Soviet rulers think when they have to contemplate this possibility? Are Soviet leaders more deterred by the prospect of having large numbers of people killed, or by having larger numbers of people alive and more skeptical about the system?

An advantage of targeting electric power in the first attack is that it will work most directly to wear down such Soviet communications systems, even though the high-priority communications links will, of course, remain in operation, powered by back-up generators, etc. A portion of the Soviet regime's hold on the masses will depend on regular radio and public address communications, the kind that have been used to sustain morale and relay directives in the past. In the aftermath of a nuclear war, the average Russian is more likely to do as he is told when he is told by the familiar voices of radio or TV announcers, and he is less likely to function as the

regime wishes if he is denied most of such mass communications contacts. By comparison with the United States, far less of the Soviet population will be equipped with battery-powered radios (not to mention battery-powered TV's or CB-radios) and this relatively greater loss of such communications links on the Soviet side may be one of the inherent advantages we have in our comparisons of raw economic recovery potential after a World War III.

2.2.5 *Are there some geographical portions of the USSR that lend themselves particularly much to a transportation-interrupting attack, such that we should try to isolate such an area (with the clear threat that it will be lost to Moscow's control) while leaving transportation and communication links (and concomitant political control) relatively unthreatened for the rest of the Soviet empire?*

It might be suicidal for the United States to threaten the total control of the Politburo over Russian affairs, but it might be a far more measured and usable deterrent to threaten its control over just Siberia, or just the Muslim portions of the USSR, or at least just the European satellites of the Soviet Union which were never formally incorporated into the USSR.

Despite the efforts of Soviet masterplanners to try to integrate all the economies of Eastern Europe into one large Socialist unit, to harness the economies of scale facilitated by central planning and division of labor, the resistance to this has prevented it from being realized to any extent comparable to the West European experience. While the entire relationship has at times been viewed from the outside as a Soviet plot to exploit and loot the economies of countries like Hungary and Poland and East Germany, the paradoxical outcome has persisted that living standards in such countries are higher than in the Soviet Union. With Rumania visibly in the lead, the regimes of all the Soviet satellites in Eastern Europe have resisted economic integration, and have moved instead for relatively high degrees of economic self-sufficiency and autarchy, higher degrees at least than those that apply in the capitalist world. The desire of such countries for economic independence (rather than dependence on, or interdependence with the USSR) accounts for much of this autarchy. Another part might simply be explained by a well-justified lack of confidence at Moscow itself on whether the management of

such a large economic bloc could indeed be handled, given its persistent difficulties in achieving any rationality and efficiency even within the narrower confines of the USSR itself.

What does the existence of such separate economic units say about targeting strategy? We obviously will, at times, have to strike at the concentrations of Russian armed forces based in countries like Poland and Czechoslovakia. Since we at the same time regard the peoples of Warsaw and Prague as our friends and natural allies, we will want to avoid striking at population centers here, for reasons of simple justice and humanity, and also for the practical reason that the Poles and Czechs and Hungarians and East Germans might under many circumstances become an asset for our side.

What then about economic targeting in these areas? An oil refinery in Hungary would surely be under Soviet control at the onset of the war, and for later periods as well. Would there be any reason whatsoever, therefore, to spare it? Again, if we wish to pose some difficult intra-war and post-war problems for the Soviet leadership, it might be wise to concentrate our counter-economy fire on the USSR in the first instance, perhaps even only on the Great Russian part of the USSR, waiting a while to see whether we might be better off for leaving refineries and similar economic facilities in places like Hungary intact.

An economic source in a satellite is not the same as one in Russia proper. It might fall under local control if the locals turn against Moscow. It at least forces the USSR to tie up forces guarding against this possibility. The sparing of such a target would be seen by the East Europeans as a signal that we particularly identified with them and their well-being, that we looked forward to their asserting themselves as an economically stronger national entity than the devastated Soviet Union. Under the most remote circumstances, one could then even envisage drawing military assistance or economic recovery support from countries like Czechoslovakia or Poland.

At first glance then, the lesser degree of economic interdependence in the Soviet Empire extended across Eastern Europe looks like an asset for Communist bloc recovery, as local autarchy generally makes it easier to respond economically after a nuclear war. Under closer examination, however, this autarchy relates closely to national cravings for independence from

Moscow which are always going to be an asset for our side. Our targeting philosophy must take this asset into account, and not lose it in the process of having ignored its potential.

2.2.6 *If Soviet cities are evacuated, under what circumstances should we try to inflict substantial casualties on the population as it has been moved out into the countryside? Similarly, what damage should be inflicted on evacuated cities?*

Rather than destroying an empty city outright, are there things we could do, short of this, that would be more effective for our purposes? Could we somehow destroy only parts of a city, perhaps the parts most central to the maintenance of future political control by the Soviet authorities?

Many varieties of declaratory and actual strategy come to mind here. We might announce a policy of attacking *only* evacuated cities, thus in effect offering the Soviets an incentive to return their population to the cities. We might declare our policy as destroying one evacuated city a day, until the Soviet aggressive or obnoxious behavior comes to a halt.

If only very small warheads, or conventional warheads were to be utilized, residential areas might be spread while government buildings and communications and data storage centers, i.e., the equivalent of "City Hall," were destroyed. Alternatively, bridges and railroad connections through the city might be attacked, or whatever major industrial facilities were contained in it.

Even before the introduction of highly accurate missiles, some trade-offs were available all along by which we could increase the destruction of property and reduce the imposition of casualties, for example, air bursting warheads to create less fallout and to impose fewer casualties where people are sheltered, while destroying buildings. The important point about the trend ahead is that some very unrelated developments are likely to expand our ability thus to differentiate among kinds of destruction, most importantly the improvement in U.S. missile accuracies, and the Soviet investment in additional civil defense preparations.

The general point about civil defense here is twofold. A Soviet capacity for evacuation of cities is clearly worrisome, in that it might one day embolden the Politburo to undertake an aggression thinking that less of its population and work force would suffer as a consequence. Yet such an

evacuation capability also offers us a much longer list of alternative targets, and opportunities for leverage, in trying to dissuade the Soviets from beginning, or from continuing, such an aggression. It makes our strategic problem more difficult, and more interesting. Just as Hanoi's Civil Defense system, in a paradoxical way, in 1972 was cooperating with the U.S. Air Force in holding down the casualties from the B-52 air strikes, thereby making such strikes more possible, and the USSR's investment in civil defense preparations does not only make Soviet toughness more worrisome; it also allows us to undertake forms of attack which we might otherwise have felt were too escalatory.

Where the Soviet leadership deliberately or otherwise had begun imposing heavy casualties on Americans, we might, of course, then want to respond in kind, aiming our warheads to try to hurt even an evacuated population, rather than to spare it. Nonetheless, we will always have to ask ourselves whether the Politburo is as bothered by such human losses as our side is, whether there is not some other target we could hit which would bother the Soviet leaders more, and which thus would be more of a prod to stopping their attacks.

2.2.7 *Whether cities have been evacuated or not, should we assign very high priority to precision strikes at facilities of the Soviet policy and political control system?*

It might be appropriate to do so for some regions of the USSR and not for others, depending on the ethnic composition of the area, its military and strategic precariousness, etc.

If the United States were looking for an optimal form of "demonstration strike" during a major crisis, or in response to a limited Soviet use of nuclear-warhead missiles against the United States, it might be worthwhile to strike at some known underground shelter reserved as a refuge for the Soviet political leadership, possibly even before any Soviet leaders had moved into it. Perhaps no one would thus be killed, or perhaps only a 1,000 or so out of the 110,000 political elite that apparently have been assigned preferred space in such a shelter system.

As our ideal of ideals, this kind of strike could be carried off with a conventional warhead, although it is indeed asking a great deal of the technology to demand a high kill probability against a hardened blast shelter without reliance on a nuclear warhead. Such a "demonstration strike" with a

conventional warhead could, of course, be launched even if it had only an uncertain chance of destroying the shelter in question, if only to demonstrate our low CEP and our earth-penetration capability, and our knowledge of where Soviet leaders would be hiding, and our presumed targeting intent if the war was later to go nuclear. Even a "failure" would serve as a chilling reminder analogous to an unsuccessful assassination attempt, for the Soviet Communist leaders who matter, that they might be the primary target if they launch further aggressions or further escalations of nuclear war; by all of the logic we have considered of ways to deter, this might be the most effective.

If the identified personnel shelter were remote enough from Soviet cities, and if the Russians had already crossed the nuclear threshold in their own attacks on us (perhaps without having hit our cities, having struck only at some of our land-based missile silos) we might, however, feel entirely justified in executing this kind of strike by use of a nuclear warhead.

We have thus far spoken only of threatening the shelters of the Soviet decision-makers, or of making an example by killing a thousand or so of them.

If we could kill the larger part of the 110,000 Soviet elites who matter, without killing a great many more Russians who were innocent of the responsibility for a World War III, would we want to do so? As a deterrent to such a launching of Soviet aggression, this clearly might be appropriate as a pre-attack threat, but would we dare or want to go through with it if we could? Much would obviously depend on whether these Soviet elites could fire all their missile power at our cities as part of their last gasp, or would be physically prevented from doing so. Much will also depend on who we expect would succeed to power in the USSR.

Of course we should avoid becoming excessively enthused about the possibilities of fine-tuning our attacks on an enemy, as we so ambitiously sort out whom to hit and whom to spare. Historically, we have often been disappointed with the "precision bombings" we have attempted. Yet the clear upshot of the improvement in our CEP is that some kinds of sorting are becoming more possible, such that certain kinds of "surgical strikes" which would have been impossible in the past will not be so in the 1990's or beyond.

We Americans may thus, all of a sudden again know less than we would like to know about the *desirability* of hitting various targets, given our desire to preserve the physical well-being and political freedom of the United States and its allies. If we could destroy the KGB, would it be to our interest to do so? If, by contrast, we could spare the KGB and destroy the bulk of the Communist Party, would this be desirable, or should we prefer the reverse? The same holds for the ordinary Soviet police, or the ordinary Soviet official bureaucracy. Our assumption is that all of such people have been assigned priority shelter space. Yet should we project from this to assume that they are all equally likely to be uncooperative with the U.S., where our goal is to get someone within the USSR to hold back further missile strikes, or to order Soviet armored columns to cease their advance and to return home? If all these different kinds of Soviet functionaries are huddled together in shelters, we might at least be able to discriminate among the workplaces and facilities they use to carry through their functions. What is vulnerable to attack for the KGB may not be at the same location as what is vulnerable to attack for the Soviet army or for the Communist Party in general.

2.3 Target Choices Which by our Restraint Might Hamper Soviet Economic Recovery

While we normally expect a more severe attack to impose more severe handicaps on Soviet economic recovery, the following choices are in part *important* for showing what may be some exceptions to this rule, or at least cases where a careful pattern of nuclear attack can frustrate Soviet desires more than a blunter attack.

2.3.1 *Should we (as already asked above in the introduction) target or leave alone Soviet central economic management operations, which the Russians have tried to run with computer cybernetics techniques instead of any market mechanisms?*

The Soviet economy surely requires some degree of central government if it is not simply to degenerate into chaos. Yet the productivity of the unofficial "private sector" in the Russian economy even today suggests that economic output might be surprisingly good if prices and markets and local profits rather than telephone calls from Moscow were allowed to determine decisions.

There are many things that are as yet imperfectly knowable about how such ("Cybernetic") central management of the Soviet economy would function in the 1980's and 1990's, and how it would bear up under a nuclear attack. Given the vast array of specific economic choices and decisions that have to be made even in the peacetime Soviet economy, will not the Soviet fetish for centralization and party control exact a more and more unbearable price, as the use of computer simulations in Moscow will prove a poor substitute for the workings of market incentives? Optimists about Soviet systems analysis and input/output analysis techniques would claim that all the advantages of the market thus somehow can be captured, without giving in to the dilution of ideological purity which a market would require. Skeptics would contend that Soviet authorities are only postponing a rude awakening here.

However well such a computer-based cybernetic system and central management would work in peacetime, moreover, can it be hardened and made survivable against attack? If Moscow is to be evacuated as part of the Soviet general civil defense strategy, do we have any sign that the central Soviet management of economic processes has itself been relocated away from Moscow? A computation center buried inside some mountain shelter might fit one's finest dreams or worst nightmares about such a system, but the evidence for the present suggests that any crucial economic planners and computer programmers are still probably going to be residing in Moscow as are their political leaders, such that the entire cybernetic process here is still not very likely to escape the impact of our attack.

If this then suggests that Soviet central economic planning can indeed be crippled by our attack, the question remains whether we would find it in the U.S. national interest to do so.

What we may know too little about is whether the human being is inherently able to snap back into the workings of an incentive-oriented economy, once the dead hand of stifling government bureaucratic regulation is lifted, or whether there is more sociological inertia and psychological conditioning to all of this, such that the Russians may have lost the work habit after sixty years of Communist rule, such that the peoples involved would not begin any "economic miracles" after their communications with Moscow were cut off.

On the one hand the persistence of the active "private plots" and black market in the USSR would suggest that Russians have not lost their ability to chase after profits; the amazing German response to the lifting of economic controls in 1948, after extensive state controls and management under the Nazis, and in the first years of the occupation, would similarly suggest that a crippling of state management in the USSR might actually get the economy rolling along more effectively. On the other hand, the disappointing results of some of the liberalizations and reforms introduced in Eastern Europe in accord with the theories of economists like Liberman might suggest that the years of Communist rule have taken their toll here (although some would conclude that this simply shows the reforms did not go far enough).

One does not want to go too far with the theory that we should restrain our attack because killing off Soviet government controls would actually be doing the Soviet economy a favor. If the U.S. attack is sufficient to upset law and order in the USSR, leaving everyone unsure of who controls what property, of whether contracts will be honored or observed from day to day, there surely would not be any effective economic output in the USSR, anymore than we would have it in the U.S. Even the most ardent believer in a market economy and *laissez-faire* sees a need for "anarchy plus a constable," which is substantially different from "anarchy."

The trickier "in-between" case we must watch, however, is that where law and order are maintained, as we are unable to destroy the police networks of the USSR reinforced by the local forces of the Soviet military, but where we prove able to destroy the central computation networks that make economic planning decisions in the USSR, thus leaving plant managers and other local economic decision-makers to negotiate deals on their own. It is here that the bizarre possibility has to be addressed that we would not do ourselves a favor by carrying through such an attack.

It is always possible, of course, that the Soviet leaders would themselves turn to a decentralized and market-oriented economic system in the aftermath of a nuclear war, just as Lenin had to turn to such a "New Economic Policy" ("NEP") in 1921, when the attempts to collectivize and socialize the USSR after the Civil War proved to be too expensive and wasteful. Stalin's return

to Marxist orthodoxy came only later, when Soviet reserves of economic potential had again been built up, and even then came at a fearful economic price.

The Soviet style historizally has been to tolerate market incentive methods when the economy is desperate, and to impose more ideologically-pure systems when things are going better (although this would surely not amount to a complete or total explanation for the backs and forths of Soviet shifts between market and command emphases). A World War III will surely make the Soviet economy desperate again and might thus lead to a disconnecting of central command-economy methanisms whether or not our missiles did the disconnecting. For the Politburo, as for our target planners, the question is now, however, whether the average Russian's response will be to show some of the old "get up and go," or to lapse into total confusion and apathy.

2.3.2 *Are there areas of Soviet geography, or of Soviet society, that clearly can be identified as net consumers rather than net producers of Soviet economic power, such that sparing them would increase rather than decrease Soviet dependency on outside-world good will after a war?*

The extreme example, of course, would be the Soviet equivalent of a retirement community, perhaps a resort city, where the unattacked survivors will not be valued workers but rather simply additional "mouths to feed."

If nuclear weapons had never been invented and we had needed to rely on conventional strategic bombing, a more careful partitioning of cities into producing and consuming neighborhoods would obviously have been undertaken by now. Given the greater accuracy of the missiles we are using, it might be appropriate again today. In a bizarre way, the addition of high-accuracy to our arsenal thus drives us to redo targeting studies as they might have been done in the days before nuclear weapons. At the extreme, as suggested at several places in this report, this could even be because we would sometimes want to utilize a conventional warhead for our attack. More generally, it is because we will not want to use a larger nuclear warhead than is necessary, and because we will want to apply precision-guidance

to destroy only what we want to destroy, avoiding certain kinds of collateral damage that would have been unavoidable in the past.

It is probably a mistake to overrate the Soviet political ability to exclude non-productive categories of population and consumption from access to scarce resources here. The USSR of today is not that the USSR of Stalin's day, and some forms of draconian discipline now would simply be as counter-productive as they would be in the United States. The Soviet ideal would surely be to keep their skilled workers alive and well-fed, while having a large number of their pensioners quietly disappear from the scene no longer constituting a demand on rations. Yet the pensioners are the parents or grandparents of the workers, and the workers could hardly be expected to deliver a maximum daily output if they felt that their loved ones were being callously turned away from the ration lines.

The upshot of all this must surely be that American nuclear attacks must not play the role of solving the Soviet leadership's Machiavellian problem here, must not do the job of killing off Soviet "non-producing consumers" while the workers are given priority access to blast and fallout shelters. An imbalancing attack on the USSR might thus be one designed to keep alive more of the old pensioners and of the parts of the economy which are largely irrelevant to the maintenance of military forces, for humane reasons, but also because they inadvertantly turn out to be assets for our national interest.

2.3.3 *Is the destruction of Soviet electric power (by the targeting of dams and nuclear power plants) a particularly effective approach, or would it have drawbacks as compared with the elimination of oil capacity?*

Important variables here would be the collateral damage imposed on civilian life and other values in each case, and the degree of induced dependence on the outside world when either source of energy is crippled. Which of the two kinds of energy inputs could most easily be replaced by outside help, in exchange for Soviet concessions and retreats on matters we care about?

Electricity might also be the form of energy which is most easily manipulatable by central authority, and also the most restorable in a matter of months rather than years.

Electrification, ever since Lenin's time, has moreover been accorded a very special symbolic value by the Soviet leadership, leading at times to excessive commitment of resources to this kind of energy. As such, the electric power transmission grid and generating plants might be a prime target for early attack as compared with the petroleum industry, leaving Moscow with diminished control over remote regions, and with enhanced incentives for the negotiations of an early truce.

Detailed considerations of alternatives on targeting here would have to be completed before one could decide exactly how much, and in what direction, to hold back the strategic attack on energy, but the choices at the least should be considered.

2.3.4 *Could an attack on the Soviet transportation network be so shaped as to leave in operation some portions of the network which might actually hamper rather than help the Politburo's grasp on power?*

While all portions of the Soviet transportation network might at first glance seem to be of value to the regime, a further analysis might identify some that could be a handicap to the regime, *if the others are destroyed*. In this category we might include avenues of retreat for Soviet ground forces outside the USSR, avenues of escape for Soviet laborer groups which might wish to leave the work areas in which the regime desires to hold them, logistics and supply links to the outside world for areas which might be in the mood to show an independence of Moscow, etc. Even those transportation links which seem mainly applicable to feeding the masses of the cities, rather than to facilitating any renewal of war production, might (as noted earlier) be left intact, thus to steer the post-truce regime in the USSR into putting civilian priorities first, rather than into writing these off as unservable because of damage already imposed in the U.S. strategic assault.

As noted earlier, such a policy of leaving some Soviet assets intact will always be more thinkable when we maintain in reserve a reasonably secure capability for destroying them later if our assumptions change.

2.4 Target Choices Affecting the Usage of Soviet Military Forces

While occasions may arise where the best way to curtail the Soviet usage of military forces would be for us to wage a counterforce attack,

the entire pattern of peacetime deterrence and limited-war restraints shows how much else has to be considered in target choices.

2.4.1 *What should our targeting policy be with regard to the one target which most often gets discussed with the appearance of low-CEP reentry vehicles, the silos of the Soviet land-based missile force?*

Generally speaking, one would want to target the USSR in a way which weakened its political and military potential, and at the same time did not increase its motivation for destroying the cities of the United States. When considering the application of our new high-accuracy reentry vehicles against their strategic nuclear forces, therefore, an important choice looms about which end of the pipeline of such forces to shoot at. If we aim at their missiles deployed in silos, we risk putting the Kremlin into a "use them or lose them" position. If we instead apply our accuracy to destroying the facilities capable of producing additional warheads and missiles, and perhaps any missile "reloads" that we can detect outside silos, we might put the Kremlin, with regard to the missiles it has in silos, instead into the position of "hold back your fire, because you won't have any more ammunition to reload with."

The targets we would want to hit might thus at times be located not very far away from Soviet silos, which would then impose a relatively demanding task on the strategic "surgery" our new missile accuracies could deliver. Soviet fears that we were embarking on a grand counterforce attack would presumably be reduced by the advanced declarations we made about targeting policy, and by the fact that the warheads we fired in destroying their missile production capability would be far fewer than if we were going after silos. (Where extra Soviet missiles stored outside of silos were intended not to be "reloads," but rather to be fired from open positions, one assumes that these, for their own survivability, would be located at points away from the hardened silos, making it easier again for the U.S. to strike at one without appearing to be striking at the other.)

With a view to keeping Soviet missiles in their silos, one might even imagine a relatively bizarre announced targeting policy of attacking any silo which has fired off its contents. The *functional* objective of such an attack would presumably be to keep the silo in question from being reloaded. The

deterrent objective of such a proclaimed policy would be to couple the volume of the American attack relatively closely to what the Russians did first; at least one U.S. warhead would thus be directed for each Soviet missile fired, as well as the other retaliation we would inflict on the basis of what targets the Soviet missile had hit (perhaps one city for each city, etc.).

Alternatively one could have a policy of targeting an empty silo, plus one or two additional silos for each Soviet missile launched, thus upping somewhat the contingent punishment and the deterrent impact.

While such a policy of targeting Soviet silos only after they had been emptied might strike some observers as an exercise in futility, it clearly has the advantage of avoiding stampeding the Soviets into launching any attack earlier than they had wanted to, and also of reminding them that any such attack will bring a punishment in whatever currency they value.

All such restraint of our counter-silo capability with accurate missiles would, of course, remain in effect only when Soviet restraints remain probable. If the Politburo deliberately, or even inadvertently, slides into an escalation to the destruction of American cities, or to a major counterforce assault on our missile forces, our restraints are not appropriate, and the logical use of our new accuracies will instead be to eliminate Soviet missile capabilities as early as possible.

What is true for the transition from peace to war must also be true for the transition from a limited war to all-out war. The U.S. should never go down in history as the initiator, but also never go into history as having been inadequately prepared to match an adversary's escalation. Fulfilling these two requirements imposes some considerable strain on American preparations. We must have the right equipment to fulfill both requirements, and we must also have done as much as possible to think through the scenarios.

2.4.2 *Are there ways in which we will feel a further need to fine-tune our attack on Soviet conventional forces?*

As noted earlier, we might want to direct our attack on Soviet conventional forces so as to blunt their ability to advance into Western Europe or China or Japan, while leaving intact, as a most valuable threat, their inherent ability to depose the regime in Moscow. While the threat of a

military takeover is likely to bother Brezhnev and his successors, and thus to serve as a useful addition to deterrence, we would have to fine-tune this possibility even more if war had once broken out, in particular because of our uncertainties about the exact command and control procedures which govern the Soviet missile force.

Could Brezhnev's successor successfully order the firing of such missiles as his angry last gasp, if the Army was about to seize power? Or could the conventional ground forces prevent this? Conversely, could the ground forces successfully order such a firing of strategic missiles against American cities as their last angry move, if the U.S. attack had been too successful at wearing down their power? Or would Brezhnev or his equivalent be able to veto this?

Stopping the Soviet ground forces from reaching Frankfurt and Paris is clearly a desirable objective in our target planning, and deterring the entire Moscow elite from even launching such an attack is also very important. How we then apply our capacity for surgical strikes to the military components of Soviet decision making, *beyond* these goals, will however raise a more delicate set of choices. As we learn more about the subject, we might even have to discriminate our degrees of attack among different components of the armed forces, or even different portions of the ground forces.

2.4.3 *How urgent will it be to attack the flows of Soviet military production for conventional warfare?*

The targets for nuclear attack that would normally draw least question are the networks of Soviet military weapons production, beginning with steel and ball bearings and aluminum, and finishing with tanks and jet aircraft. These were the targets for the World War II bomber offensive; they are targets which are fully acceptable morally as a natural part of trying to defeat an enemy. When civilians are killed as an accidental by-product of the bombings of such targets, it is normally painted as something to be regretted, whether it comes as a failure of World War II "precision bombardment," or as the inevitable result of the size of nuclear explosions.

Yet does such targeting make sense, where the speed and volume of the fire in a nuclear war has changed everything else so much? In the time it would take to finish construction of a tank, or to move ball-bearings and

steel and aluminum along until they have reached a final state as weapons, might the world not have been convulsed by such a major nuclear disaster that the direct impact on *military* production discussed here will have really lost most of its significance? Much depends on how the rest of the war is fought, on whether cities get evacuated, whether nuclear strikes are confined to targets far away from population, etc. Paradoxically, it will generally make more sense to destroy the conventional weapons assembly chain when civilians have not been killed, and it will generally be less sensible to complete this process when the costs to society of the rest of the nuclear exchange have already gone through the roof.

Under all circumstances, moreover, one might again want to stand back and hold back one's fire for a little while, before deciding that the other side's production facilities for steel or ball bearings or aluminum need destruction. Such destruction might be achieved rapidly on short notice later in the exchange, and relatively little may depend simply on heading off another week's Soviet production run of tanks or jet fighters. Within that week, much more basic decisions on the entire future of the Soviet system (and the American system) may have been decided, along with major questions of future economic recovery and of comparative control over sectors of the globe.

In short, the argument here is that we should wait to see how the world is getting by its major risk of nuclear decimation, before we take irreversible steps in eliminating the sources of inputs like aluminum and ball-bearings. While such inputs for certain can still be processed into weapons over time, they might also be rerouted through the chaos of the war into things the recovering societies will need much more.

In many ways the dilemma here is analogous to our own post-attack choices on priority of production. If a World War III has occurred, how urgent will it be to try to get extra tanks and artillery shells on their way to Europe, as compared with assigning all possible effort to getting our own agricultural and industrial processes functioning again, to stave off a complete collapse of society? Much of this choice will always depend on the degree of severity of the nuclear exchange. Where the exchange has indeed been severe, however, many assumptions in our foreign policy and military policy choice will have

been drastically altered, such that our own steel and ball bearings and aluminum may have to be consigned to tractors and locomotives, ahead of tanks or air-frames, even if the contest were defined as nothing more than preventing Soviet domination of the globe by the year 2020.

III. SOME CONCLUSIONS

We at the outset of this discussion suggested that a traditional list of target categories (Soviet population, Soviet military forces, Soviet political leadership, and Soviet economic recovery) did not illuminate important choices for American policy as much as masking them. With regard to the first of these categories, our general desire is clearly to avoid harming the Russian people, even when much of MAD doctrine has bet the possibilities of peace on a threat poised against their safety. It is not just for humane considerations but also for reasons of intra-war deterrence and post-war recovery, that we will want to consider sparing such population targets when other targets might now be hit with accuracy and discrimination.

While our desire might more directly and sensibly be to cripple Soviet military capability, there will, as noted, be many situations arising where we may not wish to dare to try this, lest it lead to an escalation and an all-out destruction of the United States which could be avoided. No one denies the appropriateness of a maximum U.S. counterforce effort if the Soviets have launched a spasm war against the U.S., striking at the whole list of our targets, for such a counterforce response on our part would be the only way to help our people and serve our national interests. There will be many other scenarios, however, where such a counterforce response would be inappropriate.

The target opportunities which most merit deeper explanation may thus show up in the last two categories, in the broad areas of political and economic management of the USSR, where, however, the outcomes that we can affect by the form of our strategic attack will, as suggested throughout this study, emerge in quite complicate forms. The choices on targeting outlined above may offer various prospects which might be of value to the U.S., but each of which must be weighed carefully lest we commit ourselves to it to an inordinate degree or at an inappropriate moment. Such prospects have very broadly consisted of: greater dependency of the USSR on foreign economic cooperation, greater domestic challenge to the Politburo's authority, greater economic slowdown of the Soviet economy, and greater incentive for moderation in the Soviet use of military force.

There are thus various ways of construing the message offered here. The clearest form may be that we must watch for *anomalies*, where our nuclear attack, if it had been unrestrained, would have helped rather than hurt the Kremlin's leadership, where the sparing of certain targets will conversely serve our purposes rather than those of the Politburo.

Deeper analysis and fine-tuning of these prospects is obviously required, if we are to sort out exactly those targets which it is to our interest to hit, as compared with those which we, for our own national purposes, need to spare.

Some delicate political games are thus in store here. We will want to plan our nuclear targeting policy to deter nuclear war in the first place, and also to generate a reasonable outcome for the United States if such a war then nonetheless happens. Part of the latter will depend on giving Soviet leaders some incentive to hold back the worst they can do to us, which means maintaining a threat against something they will continue to value into the future. A large part of deterring war in the first place will, however, depend on making it obvious to this Soviet leadership that they will lose, rather than gain, by initiating any war.

We will thus generally want to aim to keep the Russian leadership on a "short leash," leaving them *something*, so that revenge is not all they have left to look forward to, but at the same time limiting their net power and keeping them dependent on our good will. We will want to maintain strategic stability and intra-war deterrence, while at the same time making some real and continued contribution to pre-war deterrence, i.e., the deterrence of any and all Soviet aggressions from the very outset.

DISTRIBUTION LIST

DEPARTMENT OF DEFENSE

Armed Forces Staff College
ATTN: Reference & Technical Services Branch

Assistant Secretary of Defense
International Security Affairs
ATTN: Policy Plans & NSC Affairs
ATTN: European & NATO Affairs

Assistant Secretary of Defense
Comm., Cmd., Cont. & Intell.
ATTN: Surveillance & Warning Systems

Assistant Secretary of Defense
Program Analysis & Evaluation
2 cy ATTN: Regional Programs
2 cy ATTN: Strategic Programs

Assistant to the Secretary of Defense
Atomic Energy
ATTN: Executive Assistant
ATTN: Nuclear Policy Planning

U.S. European Command
ATTN: J-5
ATTN: ECJ2-T
ATTN: J-3

Commander in Chief, Atlantic
ATTN: N-22
ATTN: J-5/J-3

Commander in Chief, Pacific
ATTN: J-3
ATTN: J-5

Defense Intelligence Agency
ATTN: DN
ATTN: DB-4
ATTN: RDS-3C
ATTN: DB-1
ATTN: DT

Defense Nuclear Agency
ATTN: STNA
ATTN: RATN
ATTN: VLWS
ATTN: DDST
4 cy ATTN: TITL

Defense Technical Information Center
12 cy ATTN: DD

Field Command
Defense Nuclear Agency
2 cy ATTN: FCPR

Field Command
Defense Nuclear Agency
Livermore Division
ATTN: FCPRL

Joint Chiefs of Staff
ATTN: J-3
ATTN: SAGA
ATTN: J-5

DEPARTMENT OF DEFENSE (Continued)

National Defense University
ATTN: NWCLB-CR

National Security Agency
ATTN: F. Newton
ATTN: F. Irons

Undersecretary of Def. for Rsch. & Engrg.
ATTN: Strategic & Space Systems (OS)

DEPARTMENT OF THE ARMY

Deputy Chief of Staff for Ops. & Plans
Department of the Army
ATTN: DAMO-RQS
ATTN: DAMO-SSP
ATTN: DAMO-NCN

U.S. Army Concepts Analysis Agency
ATTN: MOCA-WGP

U.S. Army War College
ATTN: Library

DEPARTMENT OF THE NAVY

Naval Academy
ATTN: Nimitz Library/Technical Rpts. Branch

Naval Postgraduate School
ATTN: Code 0142, Library

Naval War College
ATTN: Code E-11, Tech. Service

Office of the Chief of Naval Operations
ATTN: OP 604C
ATTN: OP 981

DEPARTMENT OF THE AIR FORCE

Headquarters
Air Force Systems Command
ATTN: XR

Air Force Weapons Laboratory, AFSC
ATTN: NSB
ATTN: SUL

Assistant Chief of Staff
Intelligence
Department of the Air Force
ATTN: INA

Assistant Chief of Staff
Studies & Analyses
Department of the Air Force
ATTN: AF/SAG
ATTN: AF/SASC
ATTN: AF/SAF

Strategic Air Command
Department of the Air Force
ATTN: NRI-STINFO Library

DEPARTMENT OF THE AIR FORCE (Continued)

Deputy Chief of Staff
Operations Plans and Readiness
Department of the Air Force
ATTN: AFXOORR
ATTN: AFXOJFM

Tactical Air Command
Department of the Air Force
ATTN: DRA

OTHER GOVERNMENT AGENCY

Central Intelligence Agency
ATTN: OSI, J. Foster
2 cy ATTN: OSR/SFD

DEPARTMENT OF DEFENSE CONTRACTORS

Analytical Assessments Corp.
ATTN: A. Wagner
ATTN: H. Berger
ATTN: G. Quester

BDM Corp.
ATTN: J. Bode
ATTN: J. Braddock
ATTN: C. Wasaff
ATTN: R. Buchanan

General Electric Company-TEMPO
ATTN: DASIAC

General Research Corp.
ATTN: W. Scott

Historical Evaluation & Rsch. Org.
ATTN: T. Dupuy

Hudson Institute, Inc.
ATTN: H. Kahn

DEPARTMENT OF DEFENSE CONTRACTORS (Continued)

IIT Research Institute
ATTN: Documents Library

JAYCOR
ATTN: R. Sullivan

R & D Associates
ATTN: C. MacDonald
ATTN: L. Hanneman
ATTN: R. Port

Rand Corp.
ATTN: J. Foster
ATTN: B. Bennett

Santa Fe Corp.
ATTN: D. Paolucci

Science Applications, Inc.
ATTN: W. Yengst

Science Applications, Inc.
ATTN: W. Layson

System Planning Corp.
ATTN: J. Douglas

TRW Defense & Space Sys. Group
ATTN: D. Scally